

REMARKS

This is a full and timely response to the non-final Office action mailed November 12, 2008. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

Present Status of Patent Application

Upon entry of the amendments in this response, claims 1-4, 7, and 11-20 are pending in the present application. More specifically, claims 5-6 and 8-10 have been withdrawn previously as a result of a restriction requirement; claims 3-4, 11-12, and 16-20 are previously presented claims; and claims 1-2 and 13-15 have been currently amended without introduction of new matter.

Reconsideration and allowance of the application and presently pending claims are respectfully requested.

A. Indication of allowability

Applicants sincerely thank Examiner for indicating that claim 4 would be allowable in rewritten in independent form including all of the limitations of the base claim and any intervening claims. However, Applicants have refrained from rewriting claim 4 in independent form and have instead opted to currently amend independent claim 1 without undesirably limiting it by incorporating the subject matter of claim 4. Applicants respectfully submit that claim 1, at least as currently amended, is allowable over the cited references. Consequently, Applicants respectfully request allowance of independent claim 1 as well as dependent claim 4, which is allowable by law arising from claim dependency.

B. Claim Rejections under 35 U.S.C. §103

Statement of the Rejection

Claims 1-3, 7 and 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murdock (US 5,853,383) in view of Wolcott (US 4,859,378).

Response to the Rejection

Claim 1

Applicants respectfully traverse the rejection of claim 1 because the Office action fails to satisfy the requirements for a proper rejection of this claim under 35 U.S.C. 103(a). Specifically, the rejection fails to provide a proper reason to modify Murdock in light of Wolcott.

In this matter, it may be relevant to draw attention to *KSR International Co. v. Teleflex Inc.*, No. 04-1350 (April 30, 2007), wherein the Court stated that “*it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does . . . because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.*” *Id.* at 14-15. (Emphasis added).

Turning now to the MPEP, attention is drawn to MPEP § 2141. III Rationales To Support Rejections Under 35 U.S.C. 103, which states in pertinent part:

“Office personnel must explain why the differences(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art. . . . The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at ___, 82 USPQ2d at 1396.”

(Emphasis added)

Applicants respectfully assert that the Office action fails to provide articulated reasoning for combining Murdock with Wolcott and furthermore, improperly justifies making such a combination by using an unsubstantiated and conclusory statement. Specifically, in combinedly rejecting claims 1 and 7, the Office action acknowledges that Murdock fails to disclose that “*the substrate additionally defines a V-shaped recess located about the hole on the substrate, wherein the lump is confined inside the recess of the substrate.*”

In order to overcome this deficiency, the Office action then makes reference to Wolcott in order to allege that “*it would have been obvious to one having ordinary skill in the art at the*

time invention was made to employ a V-shaped recess about the hole, wherein the lump is confined inside the recess of the substrate in order since one would be motivated for the recess "to receive and be filled with molten and displaced material ... " (col. 2, line 30-31). This would allow the device to maintain a smooth planar surface as shown in Figure 2." (Emphasis added).

Applicants respectfully point out that the motivation provided above (vis-à-vis Wolcott's col. 2, line 30-31, and his Fig. 2) is improper because it merely reinforces reasons provided in Wolcott for filling a recess in the manner described in Wolcott, rather than providing any motivation for modifying Murdock in light of Wolcott. In other words, the Office action fails to indicate any specific shortcoming in Murdock that would justify why one of ordinary skill in the art would incorporate Wolcott's teachings into Murdock.

As a result, Applicants respectfully submit that the reason provided in the Office action for modifying Murdock using Wolcott is merely a conclusory statement with no articulated reasoning, and therefore contradicts the requirements of MPEP § 2141. III Rationales To Support Rejections Under 35 U.S.C. 103 (reproduced above). Additional remarks pertaining to "*a smooth planar surface*" is provided below in response to the rejection of claim 2. These remarks are equally pertinent to the rejection of claim 1 as well.

Notwithstanding the shortcoming identified above, Applicants have opted to amend claim 1 in order to move forward prosecution in the case and highlight certain aspects that are clearly distinguishable over the cited references. As amended, the claim now specifically cites a "lump" that is characterized as having "*an irregular shape*," and wherein the lump is "*confined inside the recess of the substrate without extending up to a level corresponding to the planar surface of the second side, thereby allowing surface mounting of the surface mount module using the planar surface of the second side without additional rework being carried out upon the lump*."

Certain aspects pertinent to this amendment have been disclosed in Applicants' original specification. For example, attention is drawn to Applicants' Fig. 4 which shows a lump 150, and to page 2 wherein certain advantages in confining the lump inside a recess have been described.

Specifically, Applicants' page 2, lines 26-31 teaches that Applicants' invention overcomes a prior art handicap which is described as follows: "*Unfortunately, heat staking produces irregularities in the lumps of thermoplastic formed during the heat staking process. These irregularities must be reworked to make the display circuit board suitable for use in a surface-mount environment. This rework is not only time consuming and therefore costly, but if significant*

material is removed, the holding strength provided by the stake is weakened considerably.”

Applicants have sought to address these aspects in currently amended claim 1 and respectfully submit that the claim, at least as amended, is allowable over the cited references. It is therefore requested that the rejection of claim 1 under 35 U.S.C. 103(a) be withdrawn followed by allowance of the claim.

Claim 2

Applicants respectfully traverse the rejection of claim 2 because the Office action fails to satisfy the requirements for a proper rejection of this claim under 35 U.S.C. 103(a). Specifically, the rejection fails to provide a proper reason to modify Murdock in light of Wolcott. In this matter, Applicants respectfully draw attention to remarks provided above and submit that these remarks are equally applicable to the rejection of claim 2 as well.

Furthermore, in justifying the rejection of claim 2, the Office action provides the following remark (in pertinent part) as a motivation for modifying Murdock in light of Wolcott: “*This would allow the device to maintain a smooth planar surface as shown in Figure 2.*” Applicants respectfully point out that this remark constitutes a conclusory statement with no articulated reasoning as to why such a “smooth planar surface” would be desirable (presumably in Murdock). Neither Murdoch nor Wolcott disclose any teaching or suggestion related to “surface mounting,” which is in contrast to the distinctively worded portion of claim 2 directed at surface mounting.

Specifically, as far as Murdock is concerned, one of ordinary skill in the art will recognize that a “planar surface” is neither necessary nor logical in the assembly process described in Murdock wherein two sub-assemblies are attached to each other using adhesive (as described in the reproduced text below; col. 9, lines 26-35):

Circuit board assembly 18 is attached to housing 16 by posts (not shown in FIG. 1) passing through openings 13a and 13b, the ends of the posts being heated/melted in order to heat stake the circuit board assembly 18 to the housing 16. Lower housing 20 is attached to the upper housing 16 by means of adhesive 30, the upper surface 34 of adhesive 30 being adhered to both lower housing 20 and upper housing 16 including the bottom surfaces of wings 15.

Shown partially on the underside of circuit board assembly 18 is a button cell battery 32.

It can be clearly understood from this assembly process taught in Murdock, that it is improper and illogical on the part of the Office action to arbitrarily assert that it would be desirable to modify Murdock in order to provide a planar surface as shown in Wolcott’s Fig.2.

The impropriety is all the more glaring in light of the fact that Murdock clearly teaches that a button cell battery is located on the underside of circuit board assembly 15, thereby rendering a “planar surface” incongruous.

Notwithstanding the impropriety described above, Applicants have opted to currently amend claim 2 in the interests of moving forward prosecution in the case. As amended, the claim now specifically cites a “lump” that is characterized as having an irregular shape. The lump is further characterized as being “*confined inside the recess of the substrate without extending up to a level corresponding to the planar surface of the second side, thereby allowing surface mounting of the surface mount module using the planar surface of the second side without additional rework being carried out upon the lump.*”

The surface mounting aspect has been addressed above vis-à-vis the lack of any reference to “surface mounting” in the cited art. Additionally, attention is drawn to the portion of amended claim 2, which cites “*without additional rework being carried out upon the lump.*” This aspect is pertinent in view of the prior art shortcoming identified in Applicants’ page 2, lines 26-31 (reproduced above).

In summary, Applicants respectfully submit that claim 2, at least in currently amended form, is allowable over the cited references and hereby request that the rejection of claim 2 under 35 U.S.C. 103(a) be withdrawn followed by allowance of the claim.

Claims 3, 7, 11 and 12

Applicants respectfully submit that each of these claims is allowable for several reasons. One amongst these several reasons is due to the fact that each of these claims is directly or indirectly dependent on claim 1, which is allowable for reasons cited above. Consequently, claims 3, 7, 11 and 12 are also allowable by law arising from claim dependency. Applicants respectfully request that the rejection of these claims under 35 U.S.C. 103(a) be withdrawn followed by allowance of the claims.

Claim 13

Applicants respectfully traverse the rejection of claim 13 because the Office action fails to satisfy the requirements for a proper rejection of this claim under 35 U.S.C. 103(a). Specifically, the rejection fails to provide a proper reason to modify Murdock in light of Wolcott. In this matter, Applicants respectfully draw attention to remarks provided above and submit that these remarks are equally applicable to the rejection of claim 13 as well.

Notwithstanding this shortcoming, Applicants have opted to amend claim 13 in order to move forward prosecution in the case and highlight certain aspects that are clearly distinguishable over the cited references. As amended, the claim now specifically cites an “irregularly shaped lump” that is “*located wholly inside the recess and substantially below the plane of the second surface, thereby securing the component to the substrate and allowing surface mounting of the module using the second surface.*” (Emphasis added). Several remarks made above vis-à-vis the lack of any reference to “surface mounting” in the cited art, are equally pertinent in response to the rejection of claim 13 as well.

Furthermore, it may be pertinent to point out that Wolcott’s Fig. 2 not only fails to show “an irregularly shaped lump” as cited in amended claim 13, but further fails to show such a lump being “wholly” contained inside the recess i.e. “*substantially below the plane of the second surface.*”

In short, Applicants respectfully submit that claim 13, at least in currently amended form, is allowable over the cited references and hereby request that the rejection be withdrawn followed by allowance of the claim.

Claims 14-20

Applicants respectfully submit that each of these claims is allowable for several reasons. One amongst these several reasons is due to the fact that each of these claims is directly or indirectly dependent on claim 13, which is allowable for reasons cited above. Consequently, claims 14-20 are also allowable by law arising from claim dependency. Applicants respectfully request that the rejection of these claims under 35 U.S.C. 103(a) be withdrawn followed by allowance of the claims.

Cited Art Made of Record

The cited art made of record has been considered, but is not believed to affect the patentability of the presently pending claims.

